Center Independent Research & Development: GSFC IRAD

Charge Sensitive Amplifier Design Automation Framework

Completed Technology Project (2017 - 2019)

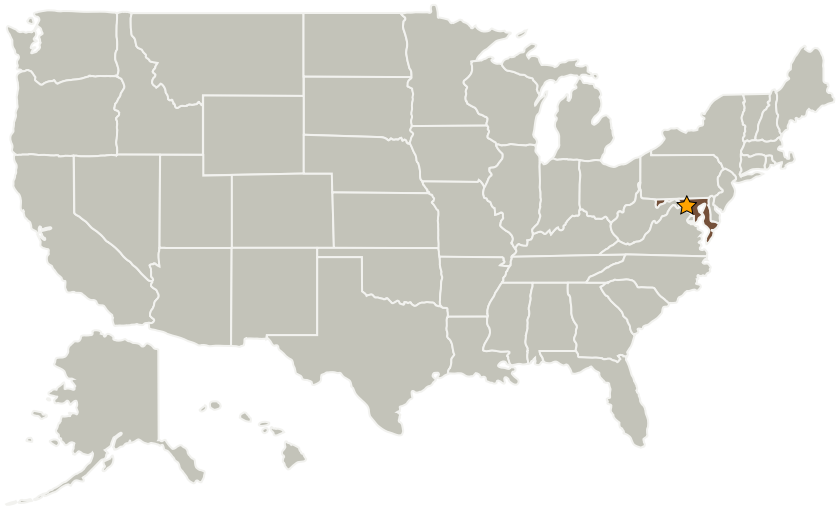
Project Introduction

This effort seeks to develop a CSA design automation framework to expedite the design of multi-channel front-end electronics to reduce the time-to-market, cost and reduce risk associated with developing custom radiation hardened front-end electronics for space instruments.

Anticipated Benefits

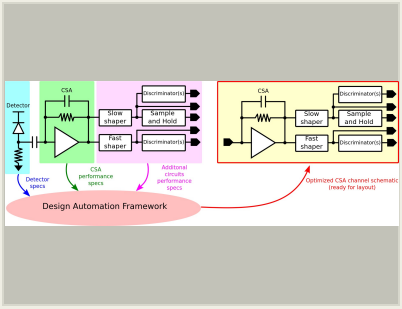
The key benefits for this project include (1) improve efficiency and reduce design risk/cost and time-to-market for front-end ASICs utilizing CSAs and (2) continue the development of cost-efficient extreme radiation hardened IP and ASICs which will enable instruments for Helio, Astrophysics and Planetary missions.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations
Maryland



CSA Design Framework

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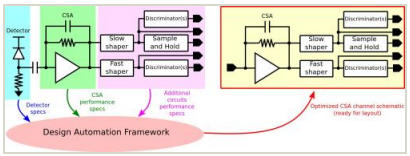
Images



CSA Design Framework
CSA Design Framework
(https://techport.nasa.gov/image/34574)

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

Project Managers:

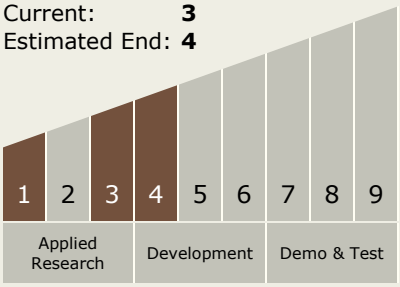
Wesley A Powell
Michael A Johnson

Principal Investigator:

Jeffrey J Du Monthier

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **4**



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Technology Areas

Primary:

- TX02 Flight Computing and Avionics
  - TX02.1 Avionics Component Technologies
    - TX02.1.6 Radiation Hardened ASIC Technologies

Target Destinations

The Sun, The Moon, Others Inside the Solar System